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ABSTRACT

A consortium of Kansas economic development service providers is building a web of virtual satellite offices that will demonstrate the delivery of economic development services in all areas of Kansas. These "offices" will use the Internet and a novel information delivery system to reach small and medium-sized businesses and individuals who need access to economic development information or other resources in Kansas. The system, the Kansas Integrated Commercialization Information Network (KICIN), uses the existing Information Network of Kansas as a delivery tool. Principal components of KICIN are the creation of the information sources for technology based on economic development, and the delivery of the information to the end user. Participants in KICIN, including universities, state agencies, and the existing network, and the roles they play are described. Three scenarios illustrate the use of KICIN by a farm implement dealer, a relocating corporation, and a small import business. (SLD)

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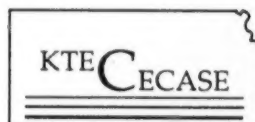
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1.0 Introduction

Technology-based economic development and technology transfer are "contact sports": making and continuing contact is essential. For Kansas—with nationally recognized technology development programs in urban areas, yet large underserved rural regions with few technology resources—the issue is: "How can the State create the necessary contact in all parts of the State and resolve service discrepancies?"

One answer lies in using the potentially powerful Internet "information highway." As the once-novel interstate highway system changed perceptions of time and distance, the Internet has the new and exciting potential to create essential telecommunications "contact" and to serve quickly and efficiently every one of the State's constituents. Communication, once hindered by distance and time, has entered a new dimension of seamless information sources available through the Internet.

A consortium of Kansas economic development service providers, is building a web of "virtual satellite offices" which will demonstrate the delivery of economic development services in all areas of Kansas. These "offices" will use the Internet, and a novel information delivery system, to reach small and medium-sized businesses, new start-ups, inventors, entrepreneurs, and anyone else who needs local access to economic development information or other resources in Kansas.

The system called the Kansas Integrated Commercialization Information Network (KICIN), uses the existing Information Network of Kansas (INK) as a delivery tool. Using INK makes the KICIN infrastructure adaptable, both easily and inexpensively, to other public service needs such as education, health, social services, and public records. Trained local service providers, such as librarians, will help users in rural areas use the network to learn, ask questions, and receive responses about the State's economic development resources. To work truly well, KICIN must be *interactive* with the user, for just "dumping" information to the public for their selective use is not effective in solving the "contact" aspect of the communication game. KICIN will also grow and expand as the telecommunications infrastructure evolves into the wide-band, high-speed network of networks.

2.0 Problem Definition.

While CECASE and other economic development groups offer a variety of economic development resources and service, there are clear discrepancies in the means to distribute these services to all Kansans. Most service activities are clustered around the various groups that provide them. For example, another division of KTEC, the Mid America Manufacturing Technology Center (MAMTC), which is jointly funded by the National Institute of Standards and Technology (NIST) has regional field offices; but these are limited and economically well located to serve more clusters of potential clients in urban and eastern parts of the state. There are many more clients who need access to economic development information and resources, yet they remain dispersed over a large area. KICIN not only creates "virtual satellite offices" for distribution of information about KTEC's services and other State economic development resources, but also creates an interactive contact point to communicate with users.

In underserved areas, it is difficult to reach many users who would benefit from knowing the State's economic development resources, or who are searching for a particular kind of help or a solution to a problem. These users tend to be a variety of small and medium-sized businesses, inventors, and start-up companies. Providing access to databases both State developed and those on the Internet is not a solution in itself. Experience has shown that the precise group we are targeting is also the least likely to make use of an "information highway". The KICIN solution addresses the issues of availability of the information sources pertinent to technology based economic development, the telecommunications delivery system, hardware and software at the delivery nodes and training of the on site "technology help" personnel.

3.0 The KICIN Solution

The principal components of KICIN are the creation of the information sources for technology based economic development and the delivery of the information to the final end user, usually unsophisticated in many of the aspects of the "information" highway. The key is not just to provide information, but to deliver it. In the State's underserved areas, a great many resources already exist that provide resource help and, most importantly, they are frequently referred to by the targeted users. These range from local librarians and Small Business Development Offices (SBDC) personnel, to county agricultural extension agents. KICIN integrates these local resource providers into a help delivery system through appropriate hardware, software and education on its use. Briefly KICIN

- creates an interactive, user-friendly, one-stop shopping and information exchange for economic development resources statewide.
- provides training and education for librarians, SBDC, and community college business program directors, as the sources of local help to educate and aid the client base in the underserved areas.

- provides access to other Internet economic development information.
- monitors the system for use and responds to queries for help, information, or assistance. The interactive nature of KICIN will aid the proposal participants in an evaluation of the effectiveness of this novel approach to economic development.
- provides direct access for "computer literate" businesses using either direct dial into the KICIN, or for subscribed access to INK
- provides hardware and software to libraries and to a limited number of non-library user node sites.
- monitors currently available and future trends in technology for the planning of possible expansion and upgrade paths for KICIN

These groups have similar commitments to provide economic development information to rural Kansas and come together in a partnership. The partnership consists of Kansas Technology Enterprise Corporation (KTEC), Center for Excellence in Computer Aided Systems Engineering (CECASE), Information Network of Kansas (INK), the Kansas State Library system, the School of Library and Information Management (SLIM) at Emporia State University, and the State Department of Commerce and Housing. The following subsections describe the participants and the role they play in KICIN

3.1 KTEC

To promote economic development in Kansas, in 1987 the Kansas Legislature funded quasi-state and -private organization called the Kansas Technology Enterprise Corporation (KTEC); CECASE is part of KTEC and has access to the subsidiary support services that it provides. In a recently conducted national critique, the Kansas Technology Enterprise Corporation (KTEC) received excellent reviews for its technology based economic development programs and management systems. It offers a spectrum of economic development services. Information from providers of these services form the core of the KICIN database. These services include:

- support of applied research and development that originates in Universities, Federal Laboratories, and private industry;
- support for development of commercial-grade product prototypes, Center-supported product services, and grants to the private sector;
- technical assistance though the Mid-America Manufacturing Technology Center (MAMTC), jointly funded by NIST;
- an Industrial Liaison Program, which supports the retention and expansion of technology-based Kansas businesses;

- the Kansas Value-Added Center which strives to enhance agricultural, economic, and rural revitalization by promoting the growth of value-added processing facilities in Kansas;
- an investment fund to help start-up or early-stage companies which have an advanced technology base and have the potential to develop into successful businesses;
- "incubation," marketing, management, and general business assistance through the newly formed Centers for Innovation and Commercialization.

3.2 CECASE/University of Kansas

CECASE is one of KTEC's five Centers of Excellence. CECASE is a business-friendly shop at the University of Kansas, and its staff applies the power of computer-aided systems engineering to the design and manufacture of products and the delivery of services. The Center has experience managing and conducting applied research and development for large grants and proposals from both State and Federal funds. The Center manages the KICIN project, and is designing and coordinating the development and implementation of the KICIN databases. CECASE will be conducting field training and education programs for the non-library-based information providers, such as Small Business Development Centers, the State Department of Commerce sites, and KTEC's economic development portion of KICIN.

3.3 INK

The Information Network of Kansas (INK) was created by the 1990 Kansas Legislature for the purpose of providing managed electronic access of public information to the businesses and citizens of Kansas. Anyone in the world can access INK; and there are already over 500 applications available concerning state, county and local governments, academic and educational organizations, and library and professional development organizations. INK brings instant economy of scale to KICIN, and KICIN allows INK to serve many of the State's smaller businesses better. The user signs an INK service Agreement confirming their agreement to the Kansas Open Records Act. Those wanting to access INK may do so without a computer account through the login "inkguest". INK also provides network management and enhancement, and supports the curriculum and database development.

3.4 Kansas State Library

The Kansas State Library staff will coordinate the purchase and installation of workstations for many libraries. With the assistance of INK, the School of Library and Information Management (SLIM) at Emporia State University, CECASE, and the Department of Commerce, the State Library staff will design and create a database of basic statewide economic resources, that will be called the Economic Development

Information Network (EDIN). Together with other information on KICIN, this will provide a comprehensive review and description of the State's economic development resources. With the assistance of SLIM and INK, the EDIN database will be created and maintained by the State Library. Updated information will be downloaded to INK data files, and made available to the network.

3.5 Emporia State University - School of Library and Information Management (SLIM)

The School of Library and Information Management at Emporia State University works with the Kansas State Library and INK in designing the short-course curriculum for the training of paraprofessional librarians, staff of public agencies, and others. The SLIM faculty also assist the staff of the State Library in the delivery of training during the project period.

SLIM's role is key to providing an educational curriculum for the citizens of Kansas on how and why to use electronic information services for economic and educational development.

The ESU SLIM faculty is active throughout the state of Kansas with pre-professional, graduate, and continuing education courses. SLIM faculty and programs are also widely utilized in the Midwest and Western parts of the United States. The higher education commissions in Colorado, Nebraska, New Mexico, North Dakota, and Oregon have chosen to deliver SLIM graduate programs in library and information management to their students.

3.6 Kansas Department of Commerce

The Department is the lead agency charged with implementing the State's long-range strategic economic development plan. Programs administered by the Department target community development, industrial recruitment, work force training, trade development, travel and tourism promotion, housing, and existing industry retention and expansion.

A significant role for DOC involves providing technical assistance to local units of government, economic development organizations, private enterprises, and private citizens. The purpose of these efforts is to assist in the start-up of new businesses, retain existing enterprises, and facilitate the expansion of existing businesses in the State of Kansas.

The Department provides six regional field representatives to disburse economic development resource information to all areas of the state. The KICIN project is viewed as a logical extension of these efforts. The Department of Commerce and Housing will help develop the Economic Development Information Network (EDIN), train economic development professionals in the use of the system, and establish several network test sites.

4.0 Summary and Hypothetical Scenarios Describing Possible KICIN Use

KICIN is a novel delivery method based on the Internet to create "virtual" satellite offices in underserved rural areas. The most illustrative way to view KICIN is to examine scenarios of its use.

Scenario #1

Individual

Tom Benton lives in Sharon Springs, a small town in Wallace County. The county is in the middle of the western edge of the state, and anything that happens in Topeka seems very remote. There are mainly ranchers and farmers in this part of Kansas, and there is little economic activity in the county which would attract service givers to the area. The county creates a very small amount of sales tax revenue for the State, for example; and per capita income is only about \$10,000.

Tom has always been interested in new ways to make his farm implement dealership more efficient. He recently devised a new and specialized device that helps his employees keep better track of their billing and hours on repair jobs. Because his employees are so happy with the device, Tom was encouraged to try to see if someone might like to manufacture it for the commercial market.

Tom begins to seek information by going to a familiar and helpful place, the public library. There he encounters Sally Tuane and Jim Nichols, the librarians who will work with him. Sally sits down with Tom at the computer and introduces him to KICIN, on the Information Network of Kansas which is available in all Kansas libraries where computers have been installed. Sally and Jim have just recently received training on how to use KICIN, and they know how to help library patrons access the information that KICIN offers. Sally knows from her training that Tom can ask questions on KICIN, so she shows him how to type in his name and describe his particular interest. She then helps him to browse through the State-Library-developed Economic Development Information Network (EDIN). She types in key words so Tom can quickly find which entries seem to fit his needs. EDIN is a database of basic statewide economic resources. Tom looks through the suggestions given by EDIN and finds that the Kansas Technology Enterprise Corporation (KTEC) sponsors a Center for Advanced Manufacturing at Kansas State University; Tom feels that this would be a good place to continue his search for help and information.

To access KTEC's information on KICIN, Sally helps Tom leave the EDIN and open up the directory which displays information about KTEC and its programs. Sally shows Tom how to type in a question he would like answered, and he does so--he wants to know who can help him assess his new tool for marketability. While Tom is looking at the KTEC information, he also discovers that there is a group of inventors who have an organization; he types in another question about how to join and then sends a query for someone to please mail him a membership application.

While Tom is looking through the economic development resources on KICIN, an answer comes back to his question immediately, for the network is being monitored for questions. Tom gets an answer about whom to call at Kansas State University (KSU); he is also notified that a message will be sent to the KTEC Advanced Manufacturing Institute (AMI), that AMI staff should contact Tom in Sharon Springs. The response to the query also notes that other KTEC Centers might be of service and his query will be sent to all of them.

Sally also suggests to Tom that they return to EDIN and see what economic development resources are geographically near. He finds that there is a Small Business Development Office in Hays, which is about 150 miles away. Tom decides to wait and see what kind of information he can get from KICIN, since he doesn't have time to travel to Hays to visit with the office. He decides to call them, though, and gets their number and address from EDIN.

Tom is just beginning to tap the resources of KICIN, but this example proposes how the network has the potential to be used.

Scenario #2

Telecommunication Technologies Unlimited (TTU)

TTU has been planning to move locations for some time. Once happy with their location near London, England, Ted Jackson, the CEO decides that things have changed for the worse economically in England and are not likely to improve. He has trouble hiring anyone because of the cost of living, and the cost of houses has made owning one prohibitively expensive. Ted has been very successful and has managed his company for the past ten years. He has decided that with today's technologies, TTU can do business anywhere; and he is encouraged to look for another site to locate his business. He knows that in England the economic situation is about the same everywhere; and he is looking for cheaper labor, tax abatements, and other incentives that he knows U.S. communities offer.

Ted, looking to see what is on the Internet about economic development opportunities, types in a choice of key words to search for information about his interests. He begins to pull up information on the network about several states; but Kansas, through its listing on KICIN, can show Ted a complete one-stop shopping list of economic services. While at first Ted dismisses Kansas as a possibility for relocation, he is impressed by the level of support services, the detail, and thoughtful programs that are in place. Not only do the state service providers offer support, but also he finds that there is a locus of telecommunications businesses in the Kansas City area, and at least one university that has a special niche in telecommunication. He explores KICIN further and not only finds EDIN, which lists the economic development opportunities in the State, but also has the ability to put his name into the computer with a request for someone in the Department of Commerce to call him. Ted is pleased to have access to this kind of information about a State. While he probably would not have considered Kansas, the system of economic development support and apparent interest in serving the entire State appeal

to him. There is accessible information available for anyone, and KICIN assures that someone will be communicating with him soon.

Scenario #3

Medium-Sized Company

Sarah Hamlin runs an import business in Coffeyville, Kansas, and has 25 employees. Sarah finds she is spending a great deal of money to keep a large inventory in her warehouse. This means her money is out of circulation; and if she experiences high demand on a particular item, getting in touch with her European suppliers is not always quick and simple to negotiate. While she is making her business work, she would like to use the latest technologies available over a commercial Internet connection to solve her inventory problem. She would like to have a "just-in-time" system of inventory monitoring.

Sarah already subscribes to America-Online, and she begins to search for help in Kansas that she could use to modernize and upgrade her inventory system. She also needs a good assessment of how her business is performing and is willing to pay a reasonable amount for such services.

As she begins to browse through the "Gopher," she sees that Kansas has an Information Network of Kansas, which she logs onto as a guest. While she is looking through material on INK, she discovers KICIN which notes that it is one-stop shopping for economic development services—just what she thinks she needs. She enters KICIN and finds the EDIN and KTEC directory of services and subsidiaries. While she browses through the database of EDIN, she notices that there is something called MAMTC, a subsidiary of KTEC; and she reads what MAMTC (funded by NIST) is doing throughout the state. While EDIN only gives basic information, she sees she can get more information from the KTEC directory; so she exits EDIN and enters KTEC's information. By reading what MAMTC does, in detail, she decides that this group is going to be able to serve her needs exactly. She notes where the MAMTC offices are and realizes that there is one in Wichita, which is not too far away. She notes the number and names of the office and gives them a call.

Sarah is more sophisticated than are many computer users, and she is able to get information by herself from using the network. The information is there, helpful, and in detail for her to see how she can access economic development help within the State. And best yet, she can browse INK's and KICIN's services as her time allows, from the comfort of her own office.